AMENDMENTS TO THE DRAWINGS

Attached is one replacement drawing sheet showing the changes made to the Figure, for review and approval by the Examiner.

Attachments: 1 Replacement Sheet

REMARKS

I. Status of the Claims and the Rejections

The drawing was objected to for allegedly failing to show every element of the claimed invention. Furthermore, claims 2, 11, and 12 were rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description and enablement requirements. Applicant has amended claim 11 and canceled claims 2 and 12 in this response to remove the problematic claim element. Applicant has also amended the drawing consistent with the specification to show every element currently recited in the claims. Therefore, Applicant respectfully requests that the objection to the drawing and the Section 112, first paragraph rejections be withdrawn.

Substantively, claims 10 and 12 were rejected for alleged lack of novelty under 35 U.S.C. § 102 based on Martinez U.S. Patent No. 7,084,774 ("Martinez"). Claims 2-5, 7-9, and 11-13 were rejected for alleged obviousness under 35 U.S.C. § 103 based on McCallister U.S. Patent No. 2,859,803 ("McCallister") in view of Japanese Patent No. 60126536 ("JP '536"). Applicant respectfully traverses these rejections.

However, applicant has amended independent claim 11 and added independent claim 22 (replacing independent claim 12) to further clarify the subject matter regarded as patentable. Applicant has also amended claims 8-10 and canceled claims 2, 4, 7, 12, and 13 in this response. In view of these amendments and the following remarks, applicant respectfully requests reconsideration and allowance.

II. Claims 10 and 22 are Novel

A. The Claims

Independent claim 22 recites a device for air-conditioning an aircraft cabin including a rotation device, a guide pipe, and a temperature sensor having a temperature-dependent form. The temperature sensor operates to measure the temperature of an air jet injected into the cabin through the guide pipe, actuate rotation of the rotation device to alter an angle of the air jet with respect to a vertical direction, and alter an impulse of the air jet by actuating a change in the cross-section of an outlet in communication with the guide pipe. The angle of the air jet is continuously variable within a range of 10-90 degrees based on a change in form of the temperature sensor. Claim 10 depends from claim 22 and recites additional features, including a second temperature sensor.

B. The Deficiencies of the Cited Prior Art

The Office Action states that Martinez discloses every feature of claims 10 and 12, upon which new claim 22 is based. Applicant disagrees. Independent claim 22 has been amended in part to incorporate the subject matter of former dependent claims 4 and 7, which were directed to the temperature-dependent form of the temperature sensor and the adjustment of the angle based on the temperature of the air jet. Martinez was not cited in the Office Action for these features, and Martinez does not disclose any temperature sensor having a temperature-dependent form. By contrast, Martinez illustrates a plurality of infrared cameras for measuring temperature in a vehicle. But infrared cameras do not have a temperature-dependent form.

For at least these reasons, Martinez is deficient with respect to independent claim 22. Claim 10 depends from independent claim 22 and recites one or more features in combination with the features of claim 22. For substantially the same reasons set forth with respect to claim 22, and further because Martinez fails to teach the combination of elements

recited in claim 10, applicant requests that the rejection of claim 10 be withdrawn and further requests that claim 22 be allowed.

III. Claims 3, 5, 8, 9, 11, and 22 are Not Obvious

A. The Claims

As described previously, independent claim 22 recites a device for air-conditioning an aircraft cabin. Independent claim 11 recites an analogous method for air-conditioning an aircraft cabin. The method includes directing at least one air jet into the cabin with a guide pipe and measuring the temperature of the air jet with a temperature sensor having a temperature-dependent form. The method also includes altering an angle of the air jet with respect to a vertical direction via rotation of a rotation device according to a change of form of the temperature sensor such that the angle of the air jet is continuously variable within a range of 10-90 degrees. An impulse of the air jet is also altered according to the change of form of the temperature sensor by changing a cross-section of an outlet in communication with the guide pipe.

Claims 3, 5, 8, and 9 depend from one of claims 11 and 22 and recite additional features in combination with the subject matter of the independent claims. For example, claim 3 further recites directing the air jet into the cabin from a ceiling area.

B. The Deficiencies of the Cited Prior Art

McCallister is directed to a seating arrangement for a passenger cabin and discloses directing fresh air into the passenger cabin through fresh air outlets (13) in the ceiling of the passenger cabin. *See* FIG. 2. However, McCallister fails to disclose measuring the temperature of the air jet, altering the angle of the air jet, or altering the impulse of the air jet. The Office Action instead cites JP '536 for these claimed features, and states that it would have

been obvious to modify the air-conditioning device and method of McCallister as taught by JP '536 to arrive at the claimed invention. However, this combination is deficient because the proposed combination does not include every limitation of independent claims 11 and 22.

JP '536 is directed to a ventilation control device for an air conditioner typically used in a building. As shown in FIGS. 1 and 2, the ventilation control device includes an airflow guide plate (2) coupled to a first temperature-sensitive shape memory alloy (7) and a rotary member (4) coupled to a second temperature-sensitive shape memory alloy (10). The first temperature-sensitive shape memory alloy is operable during heating to move the guide plate in an axial direction to increase or decrease a cross-sectional area of an outflow in response to temperature changes. The second temperature-sensitive shape memory alloy is operable during heating to rotate the rotary member and the guide plate to direct the hot air flow in a downward direction, and operable during cooling to rotate the rotary member and the guide plate to direct the cool air flow in a generally horizontal direction. Consequently, JP '536 discloses a device for modifying the flow of conditioned air into a building.

However, the guide plate is not rotated unless the air conditioner is changing operation between heating and cooling the building. In this regard, the second temperature-sensitive shape memory alloy is binary in operation, moving from the generally horizontal air flow position of FIG. 1 to the generally vertical air flow position of FIG. 2 in one movement when the operation mode of the air conditioner changes. Therefore, JP '536 does not teach continuously variable control of the angle of the air jet (between 10 and 90 degrees), as recited in claims 11 and 22.

Furthermore, JP '536 discloses that the first temperature-sensitive shape memory alloy does not become active to move the air flow guide plate laterally until the temperature of the air flow increases beyond the temperature at which the second temperature-sensitive shape

memory alloy has caused the full rotation of the rotary member and the guide plate to the generally vertical position. In other words, the rotation of the rotary member and the translation of the guide plate are never actuated at the same time. However, independent claims 11 and 22 each require that when the temperature sensor measures the temperature of an air jet and undergoes a corresponding change in temperature-dependent form, the angle and the impulse of the air jet are modified by actuation of the rotation device and an outlet according to the change of form. Thus, JP '536 does not teach the method of claim 11 or the device of claim 22.

In an aircraft, passengers are seated much closer to air outlets than in a normal building space (as envisioned by the JP '536 system). Thus, the temperature of air flowing from the outlets in an aircraft may be much more finely tuned than the temperature of air flowing into a building. To this end, the arrangement of two different temperature sensing alloys actuating at different ranges of temperatures as disclosed in JP '536 would not be desirable in an aircraft. In situations where the temperature of the air jet is close to room temperature, normal fluctuations of the air jet temperature will cause the binary second temperature-sensitive shape memory alloy of JP '536 to oscillate the air flow between horizontal and vertical directions constantly. Additionally, when the air jet begins to deliver heating air to the passenger cabin, the first temperature-sensitive shape memory alloy may not be activated immediately, which causes hot air to reach only the heads of the passengers, leaving the passengers' feet cold.

Both of these operating outcomes (constant oscillation between vertical and horizontal air flow and inadequate heating air flow to the feet of passengers) cause discomfort to passengers. As such, one of ordinary skill in the art would not be led to modify the air conditioning system of McCallister with the features of JP '536. For at least this additional reason, the proposed combination is deficient.

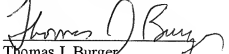
Independent claims 11 and 22 are not obvious over McCallister and JP '536 because one of ordinary skill in the art would not have made such a combination, and the proposed combination lacks multiple features currently recited in the claims. Claims 3, 5, 8, and 9 depend from one of independent claims 11 and 22, and recite one or more features in combination with the features of claim 11 or 22. For substantially the same reasons set forth with respect to claims 11 and 22, and further because the cited references fail to teach the combination of elements recited in the dependent claims, applicant requests that the rejection of claims 3, 5, 8, 9, and 11 be withdrawn and further requests that claim 22 be allowed.

IV. Conclusion

Based on the amendments to the claims and these remarks, applicant respectfully asserts that all present claims are in condition for allowance, and respectfully requests an allowance without further delay.

It is believed that no fee is due for this filing, other than the fee for the RCE. If any other fee is considered necessary, the Commissioner may treat this response as an authorization to charge Deposit Account 23-3000.

Respectfully submitted,



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